Selection of the semiconductors in a converter is quite critical. However, different from real life cost is not our main parameters in the selection. While doing the selection of the diodes and mosfets, we mainly calculated the resultant losses, effects on the efficiency and voltage/current ratings. Due to nature of the semiconductor, mainly increasing voltage rating results higher losses. Bigger or more spaced junction creates higher capacitances, so to optimize the switching and conduction losses of the mosfets, we must select the mosfet with least voltage. For that purpose we do research on suppliers site rather than manufacturers due to chip crisis. Due to lower switching loss, and acceptable conduction loss compared to other available components we selected IPP200N15N3GXKSA1 from Infineon(150V N-Channel Mosfet) as main switching element, it complies with our minimum voltage rating(input voltage\*2+induced voltage on leakage= at leat 96V).

Second semiconductor to select is the diodes in the secondary side, since they will also switch in 100Khz it is important to select a diode with low switching losses. Hence, we selected Schottky diode MBR10100G from Onsemi(100V), with maximum forward voltage drop of 950mV, which creates acceptable conduction loss.